THE DEVELOPMENT OF THE PRODUCTION TECHNOLOGIES OF BEER

Sutiahin M. I., Nikonorov V. N., Stepanov I. U., Dolya V. G., Ivakhnenko O. L.
National University of Pharmacy, Kharkiv, Ukraine
sutyagin45@gmail.com

Introduction. Beer is a valuable product in the world and the third most popular after water and tea, and the most favorite alcoholic drink. Beer - is lower alcoholic drink which is obtained by alcoholic fermentation malting wort using brewer's yeast, with the addition of hop.

Results and discussion. At the Department of Biotechnology, composition and technology of preparation light beer is developed. At the first stage of the experimental researches for selection of optimal temperature conditions fermentation malt wort the experimental samples of light beer were prepared according to the following technique. The barley was washed and soaked for obtaining malt. It was growing during 3 days and process was stopped at the moment of achieve sprouts height 3 cm. After that sprouts barley was dried at a temperature of (35-40) °C for 3 days then malt was purified from sprouts and sieved. A ready malt was ground and mash was prepared. For this purpose 3 kg of malt and 5 liters of water were mixed and heated to 96 °C. The mash was boiled for 15 minutes, added 1/3 required quantity hop. Then it was heated a further 30 minutes and added second portion of hop, and 40 minutes later - remaining quantity. After that wort was cooled to (24-26) °C and filtered. Then it was transfused into mini-brewery, and yeasts were added. Because the stage of wort fermentation is decisive for the product were used is three temperature conditions: (10-12) °C, (14-16) °C and (20-25) °C within 8 days. Then the intermediate product was poured into the bottles with the addition of glucose (4 g/l) and was allowed to stand for 8 days at a temperature (8-10) °C for the carbonation. At the expiration of carbonation time the obtained samples of light beer were determined by organoleptic and physicochemical quality indicators for. Results of the studies showed that beer was with temperature mode of fermentation (10-12) °C was characterized by the expressionless, weak, unusual for a beer to sensorial characteristics and high acidity. The beer, which was obtained at (14-16) °C, had odor of malt drink, light brown color, characteristic beer taste, and on indicators of acidity and transparency meet the requirements of normative documents. Beer, which was obtained at (20-25) °C had more muddy color with bitter taste and sharp smell of alcohol.

Conclusion. Thus, optimal temperature conditions for the light beer from malt based on barley with the addition of yeast brand Nottingham is a (14-16) °C. Obtained data can be used in future for the development of composition and technology of new types of light beer.